
Suisun Marsh Monitoring Program Channel Water Salinity Report

Reporting Period: October 2000

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RESULTS

Channel Water Salinity Compliance

State Water Resources Control Board channel water salinity standards for the Suisun Marsh were met at all five compliance stations during October 2000 (Table 1). Compliance with channel water salinity standards was determined for each compliance station by comparing October's mean high-tide specific conductance (SC) with the October standard. The standard for all compliance stations during October 2000 was 19.0 millisiemens per centimeter (mS/cm). Table 1 lists monthly mean high-tide SC at the compliance stations.

The progressive monthly mean SC for each station is used to track salinity conditions during each month (Figure 1). The progressive mean is calculated for each compliance station by averaging mean high-tide SC for a given day and all previous days that month. New progressive mean calculations begin at the start of each calendar month.

Delta Outflow

Low Delta outflow occurred during October (Figure 2). The monthly mean Net Delta Outflow Index (NDOI) for October is listed below:

Month	Mean NDOI (cubic feet per second)
October	5,736

The NDOI is the estimated average daily rate of outflow from the Delta.

Rainfall

Total monthly rainfall at the Waterman Gauging Station in Fairfield for October is listed below:

Month	Total Rainfall (inches)
October	2.54

Suisun Marsh Salinity Control Gate (SMSCG) Operations

Operations and flashboard installations at the SMSCG during October are summarized below.

Date	Flashboard Installation	Gate Status
October 1 - October 31	None	Open

DISCUSSION

Factors Affecting Channel Water Salinity in the Suisun Marsh

Factors that affect channel water salinity levels in the Suisun Marsh primarily include:

- delta outflow;
- tidal exchange;
- rainfall and local creek inflow;
- managed wetland operations; and,
- operation of the SMSCG and flashboard configurations.

State Water Resources Control Board Order WR 98-6, issued September 25, 1998, authorizes DWR to experimentally test the effects of "modified" flashboards at the SMSCG on salmon behavior. The modifications include gaps between adjacent flashboards. The modified flashboards tend to allow channel water salinity levels in the Marsh to rise somewhat higher than when the standard, full flashboard configuration is used. Experimentation with the modified flashboards began in October 1998 and may continue periodically through May 2001.

Observations and Trends

Conditions during the Reporting Period

Channel water salinity levels in the Marsh were mostly the result of low Delta outflow during the reporting period. Low Delta outflow during October 2000 and prior months caused somewhat elevated salinity levels at all compliance stations throughout October (Figure 1).

Daily mean high-tide salinity levels at monitoring stations S-35, S-97, and Mallard Island were variable during October 2000 but overall trends for the month were somewhat flat (Figure 3). High-tide salinities at Mallard Island reflect conditions in the lower Sacramento River resulting from low Delta outflow (Figure 2).

Comparison of Reporting Period Conditions with Previous Years

Monthly mean high-tide SC at the compliance stations and at monitoring stations S-35 and S-97 for October 2000 were compared with means for October during the previous nine years (Figure 4). With the exception of Station C-2, means for October 2000 were higher than means for October 1999 and 1998.

SUISUN MARSH MONITORING STATIONS AND REPORTING REQUIREMENT

The California Department of Water Resources (DWR) is required to provide monthly channel water salinity compliance reports for the Suisun Marsh to the SWRCB. This requirement is based on SWRCB Water Rights Decision 1641, dated December 29, 1999, and previous SWRCB decisions. Channel water salinity conditions in the Suisun Marsh are determined by monitoring specific electrical conductivity. Specific electrical conductivity is referred to in the reports as "specific conductance".

The monthly reports are submitted for October through May each year in accordance with SWRCB requirements. The reports are required to include salinity data from the stations listed below:

Station Identification	Station Name	General Location	Status
C-2	Collinsville	Western Delta	Compliance Station
S-64	National Steel	Eastern Suisun Marsh	Compliance Station
S-49	Beldon's Landing	North-Central Suisun Marsh	Compliance Station
S-42	Volanti	North-Western Suisun Marsh	Compliance Station
S-21	Sunrise	North-Western Suisun Marsh	Compliance Station
60	Mallard Island	South of the Eastern Portion of the Suisun marsh	Reporting Station for Conditions in the Vicinity of Chipps and Van Sickle Islands

Data from the stations listed below are included in the monthly reports to provide information on salinity conditions in the western Suisun Marsh. The locations of all listed stations are shown in Figure 5.

Station Identification	Station Name	General Location	Status
S-97	Ibis	Western Suisun Marsh	Monitoring Station
S-35	Morrow Island	South-Western Suisun Marsh	Monitoring Station

Information on Delta outflow, area rainfall, and operation of the Suisun Marsh Salinity Control Gates is included in the monthly reports to provide information on conditions that may affect channel water salinity in the Marsh.

Table 1

**Monthly Mean High Tide Specific Conductance (in
mS/cm*) at Suisun Marsh Water Quality Compliance
Stations**

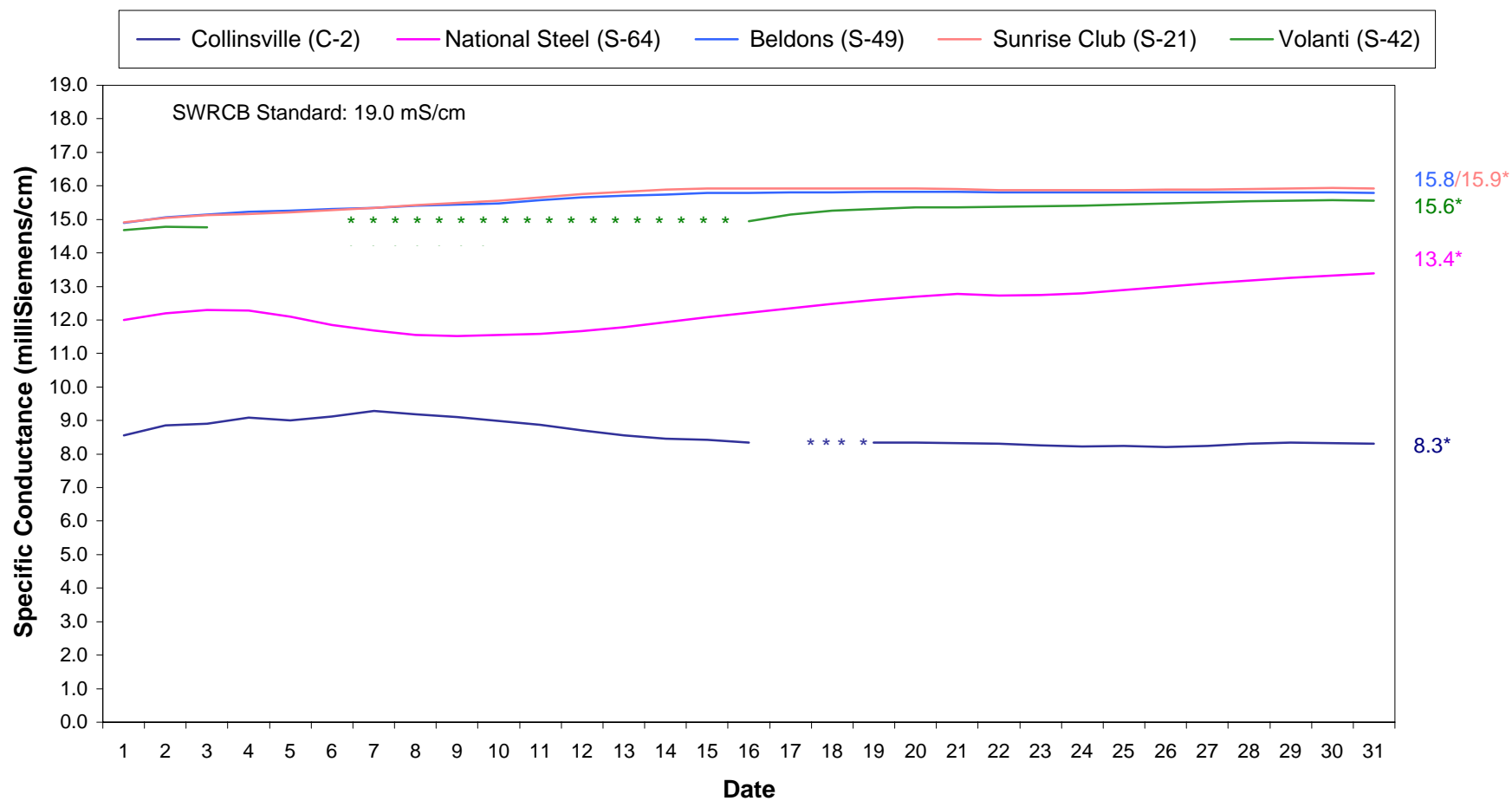
October 2000

Station	Specific Conductance
Collinsville, C-2	8.3
National Steel, S-64	13.4
Beldons Landing, S-49	15.8
Volanti, S-42	15.6
Sunrise Club, S-21	15.9

* = milliSiemens per centimeter

Note: SWRCB Standard for October is 19.0 mS/cm

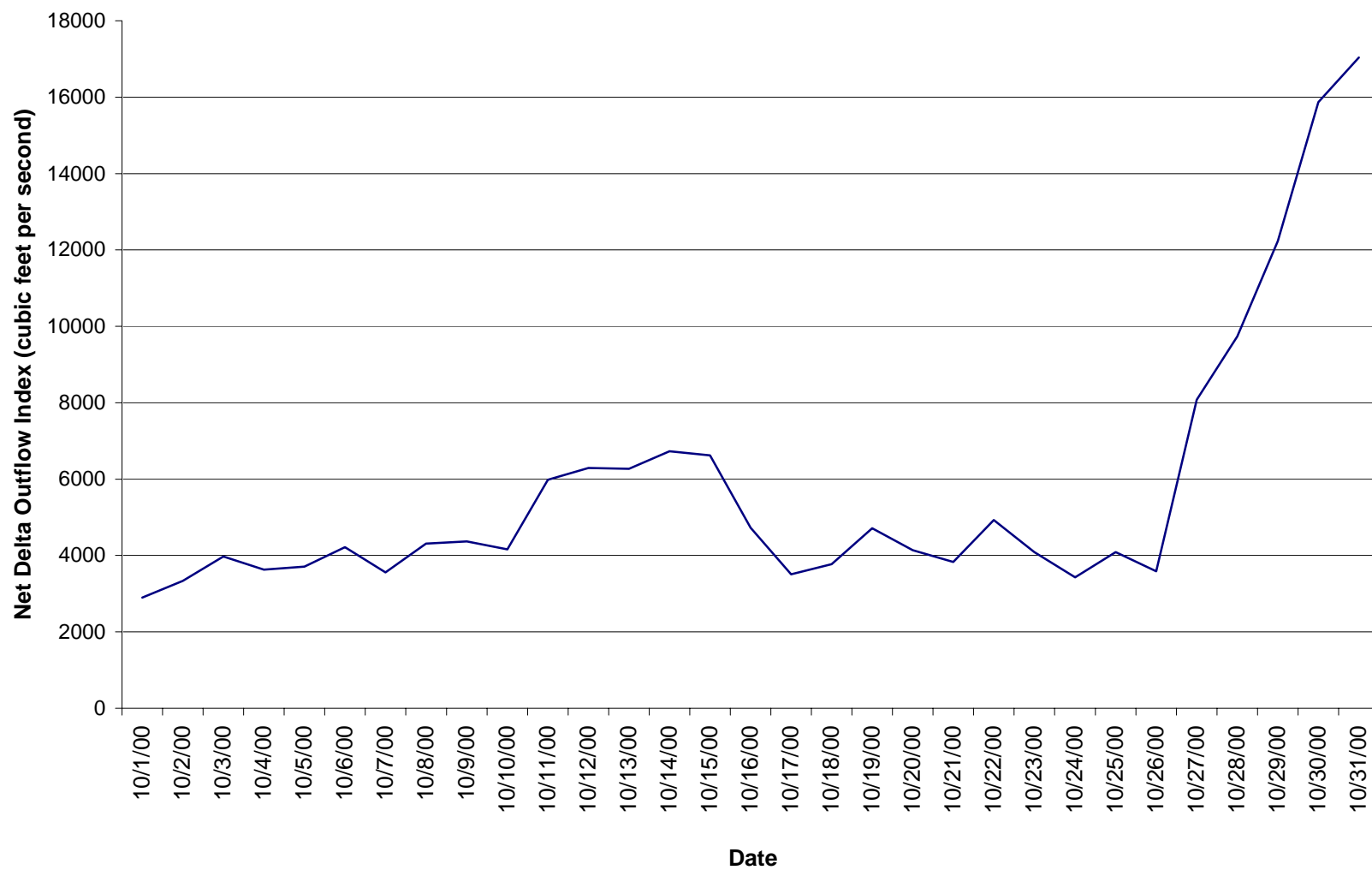
Figure 1 - Suisun Marsh Progressive Mean High-Tide Specific Conductance for October 2000



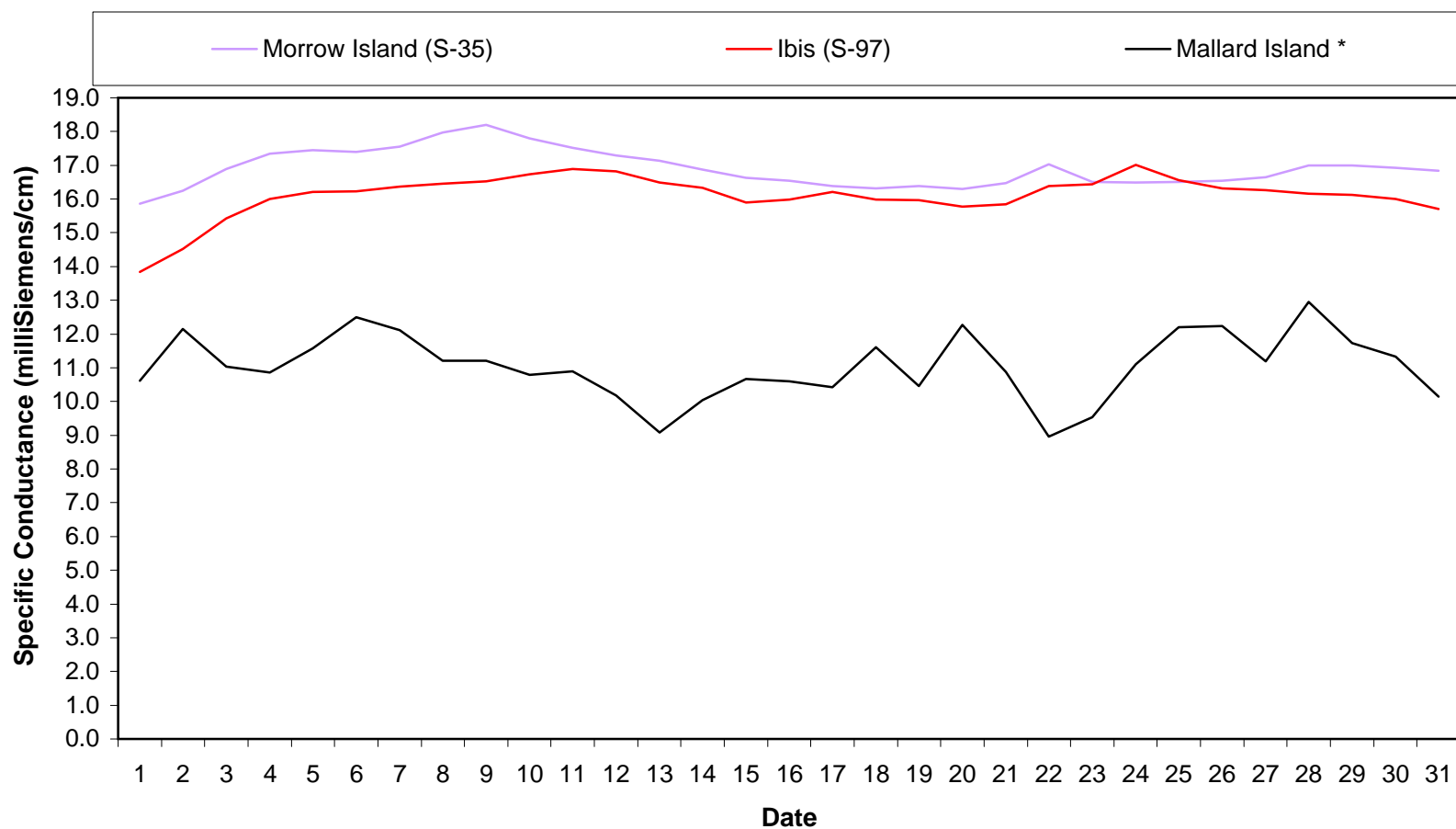
* = monthly mean specific conductance at high tide.

** Data failed QA/QC checks : heavy algal growth at S-42, stage tape slipped at C-2.

**Figure 2. Net Delta Outflow Index
October 2000**

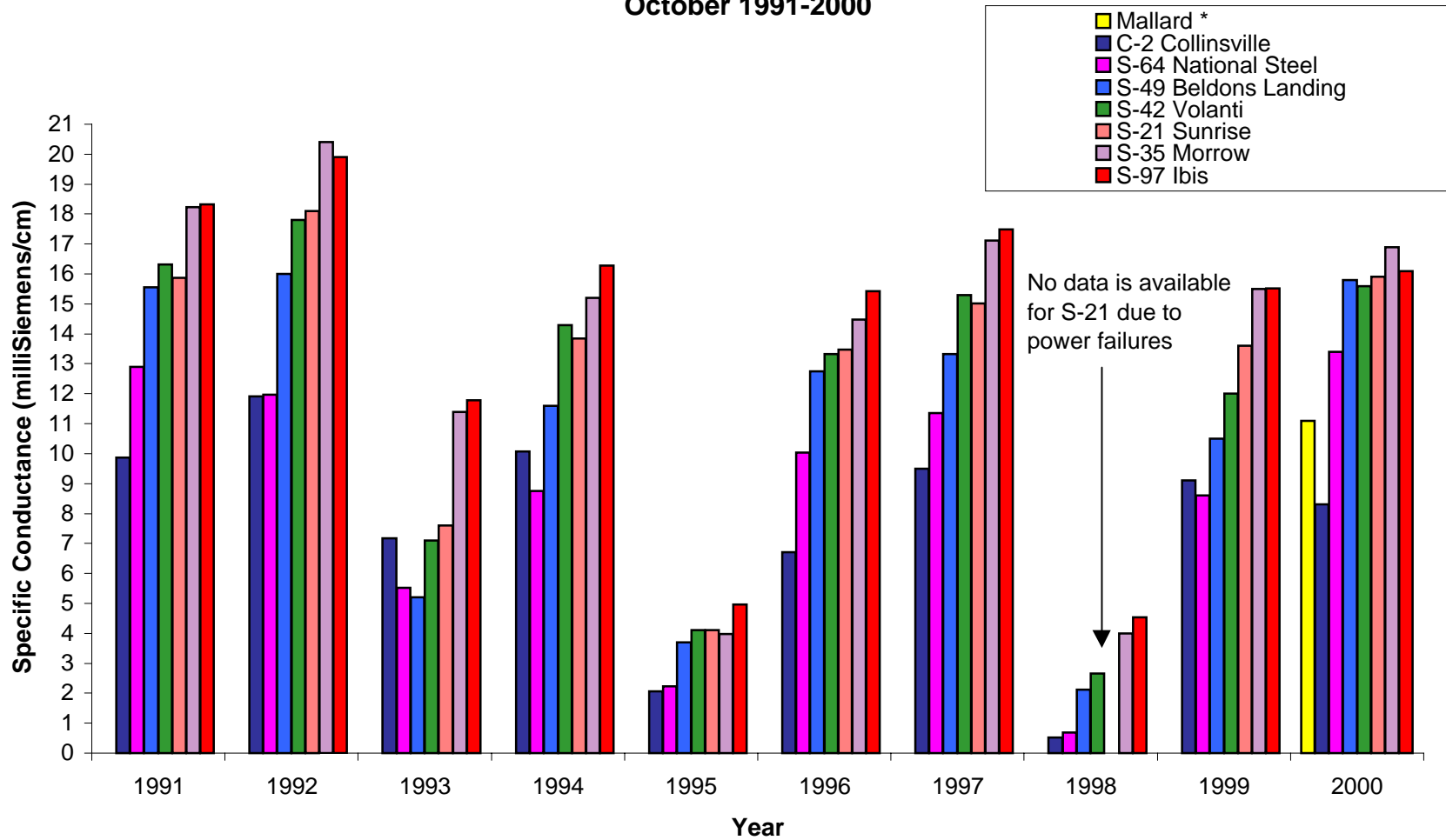


**Figure 3. Suisun Marsh Daily Mean High-Tide Specific Conductance
at Monitoring Stations S-35, S-97 and Mallard Island
October 2000**



* = Mallard Island station data is used to represent conditions at Chipps and VanSickle Islands.

**Figure 4. Monthly Mean Specific Conductance at High Tide:
Comparison of Monthly Values for Selected Stations
October 1991-2000**



* Beginning in 2000.

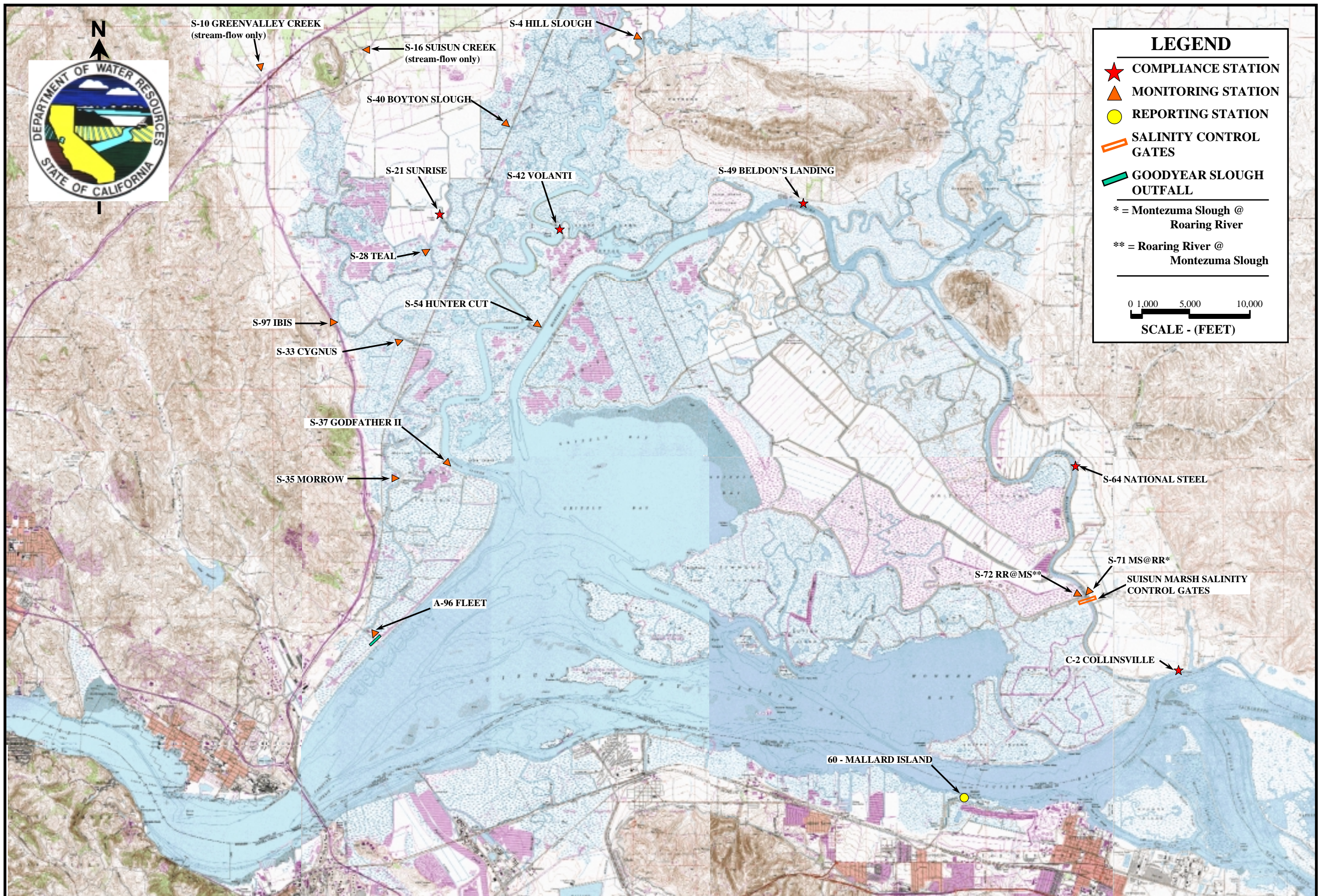


Figure 5 - Suisun Marsh Compliance and Monitoring Stations